WA 8967
11/19/2014
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RCRA Compliance Inspection Report

U.S. Department of Energy Hanford

Waste Encapsulation and Storage Facility

Richland, Washington

WA7890008967

November 19-20, 2014

FILE COPY

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U.S. Environmental Protection Agency
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RCRA Program Unit
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2/26/2015
Report Date

Cheryl Williams
Peer Review Signature

2-26-2015
Date

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Disclaimer

This report is a summary of observations and information gathered from the facility at the time of the inspection. The information provided does not constitute a final decision on compliance with RCRA regulations, nor is it meant to be a comprehensive summary of all activities and processes conducted at the facility.

Section A: Basic Facility and Inspection Information

Facility Information

Handler Name:	U.S. Department of Energy Hanford
Handler ID Number:	WA7 89000 8967
Facility Contact/Title:	Cliff Clark, Regulatory Compliance Manager
Facility Location Address:	Hanford Facility, Richland Washington
Facility Mailing Address:	P.O. Box 550, Richland, Washington 99352-0550
Contact Phone Number:	(509) 376-9333
Contact Email Address:	clark.cliff@rl.doe.gov
GPS Coordinates of Site:	Lat: 46.557143 Long: -119.54328

Inspection Information

Inspection Type:	Focused Compliance Inspection (FCI) for the Waste Encapsulation and Storage Facility (WESF)	
Inspection Date:	November 19, 2014	November 20, 2014
Arrival Time:	1:00 PDT	8:30 am PDT
Departure Time:	4:30 pm PDT	10:30am PDT
Inspection Team:	Jack Boller, RCRA Compliance Officer, EPA Matthew Vojik, Inspector, EPA Nancy Ware, RCRA Compliance Officer, Ecology Jared Mathey, RCRA Compliance Officer, Ecology	

Section B: General Facility Information

Owner/Operator Information: The owner of the facility is the United States Government. The operator is the U.S. Department of Energy (DOE). The DOE uses multiple contractors to operate the facility. DOE has contracted with CH2MHill Plateau Restoration Company (CHPRC) to manage the WESF unit group covered by this inspection.

Site Location: The Hanford Nuclear Reservation is an approximately 600 square mile facility located in central Washington State immediately north of Richland, Washington. It is bounded on the north and east by the Columbia River. Immediately to the south of the Reservation is the Richland/Kennewick/ Pasco Tri-cities urban area. The area north of the river and west of the facility is the Hanford Reach National Wildlife Preserve. The surrounding areas to the east of the facility are sparsely populated agricultural land. According to EJSCREEN, the facility is not in an environmental justice area. There are areas within the facility that have cultural significance to various central Washington and central Oregon Native American Nations.

This inspection focused on waste management activities at the WESF unit group. It is in Building 225-B adjacent to the B Plant Building in the 200 West Area which is located in the central portion of the Hanford facility approximately 15 miles from the southern boundary of the facility.

Background and Activities: The following information was obtained from the current Part A Permit Application Form dated 9/19/08, and from facility personnel during the inspection. WESF Building 225-B is a two-story, 20,000 square foot building that was constructed on the west end of B Plant in 1974 to encapsulate and store cesium chloride and strontium fluoride salts that had been separated from Hanford's high-level radioactive tank waste. The salts are stored in stainless steel capsules that are approximately 21 inches long and 3 inches in diameter. They were originally stored as product until 1997, at which time they were declared waste. An initial Part A Permit Application Form was submitted in 1997, and they began to be managed as radioactive mixed wastes in a miscellaneous storage unit subject to applicable interim status standards of which there are none. Radioactive mixed wastes are a combination of hazardous and/or dangerous waste mixed with radioactive waste. The WESF Building 225-B is constructed of steel reinforced concrete. It is partitioned into five areas which are: a cluster of seven rooms designated as hot cells; the hot cell service area; operating areas; building service areas; and the pool cell area.

The capsules are stored in the pool cell area which consists of 12 pools lined with stainless steel (See Photo101644 below). The pools are filled with 13 feet of water to provide shielding and facilitate dissipation of heat that is generated by the wastes in the capsules. Each pool is equipped with a monitoring system to detect any leakage from the capsules. This is done by using conductivity measurements to assess the ion activity of the water and measuring beta radiation levels. The capsules have been in storage in this unit for over 50 years and for 28 of those years the capsules have been declared mixed waste. There is a viewing deck within the pool cell room from which you can observe the capsules in the pool. The pool provides adequate shielding to allow entry into the pool room via the viewing deck.

PhotoP1010644 View of the pool cells

The seven hot cells located adjacent to the pool cell area are heavily shielded rooms labeled A through G (See photos P1010645 and P1010648 below). They were used for processing the highly radioactive waste placed in the capsules. Activities in the hot cells were performed remotely using robotic manipulators. Each hot cell has a six foot thick window that consists of two sheets of leaded glass, with the space between the sheets of glass filled with mineral oil. The windows allowed the operators to

observe the activities that were being conducted in the cells. Small amounts of highly radioactive mixed waste are being stored in hot cells B and C.

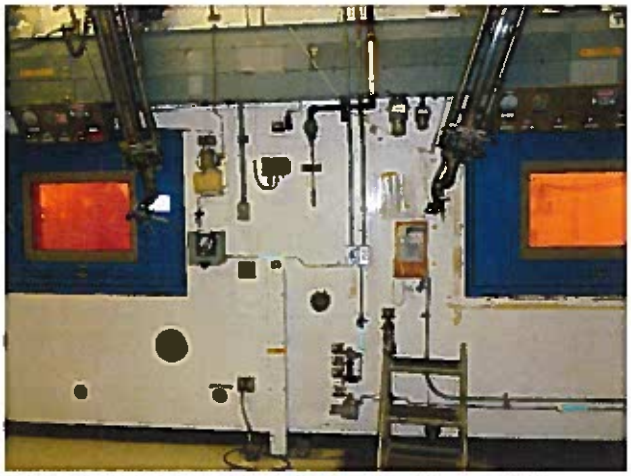


Photo P1010645 View of hot cell F and G

Photo1010648 View of interior of hot cell F (taken through window using flash camera)

The Part A Permit Application Form dated 9/19/08 indicates that the WESF TSD unit consists of pool cells 1 through 8 and 12, as well as hot cells A through G. Pool cell 12 is used to move capsules from one pool cell to another and in and out of hot cell G. Pool cells 9, 10, and 11 are not considered part of the TSD unit group because they are not used to manage hazardous waste.

WESF maintenance shop generates waste circuit boards from maintenance of monitoring equipment, used shop rags from the facility maintenance, and waste fluorescent lamps. They also generate used aerosol cans which are sent to the onsite Central Recycling Center for waste determination and designation.

Section C: Regulatory Information

Compliance History: The Hanford facility is a RCRA Significant Non-Complier (SNC). It has been in SNC status since the mid 1990's. For more details see the inspection report for the April 1, 2014 Hanford RCRA inspection.

Regulatory Status: The Hanford facility is a permitted Treatment, Storage, and Disposal facility as well as a large quantity generator of hazardous waste and a large quantity handler of universal waste. The Permit was originally issued by Ecology in 1994 and had an expiration date of September 27, 2004. DOE has filed an application to renew the Permit. Pursuant to the provisions found in WAC173-303-806(7)(a), DOE will continue to operate under the original Permit and modifications that are made to that permit until a new permit is issued. The projected issuance date of the new permit is sometime in 2016.

The Permit has undergone several modifications. The current active Permit, including modifications, is Permit Revision 8C, Class 1 Modification, dated March 31, 2012 (Permit). It identifies multiple hazardous waste unit groups within the facility. Within each unit group, there may be several individual treatment, storage, or disposal units. The Permit includes a site wide contingency plan and training plan that covers all of the operating and closing units. It has final status operating standards for some of the unit groups. The Permit requires those units that do not have final status permit standards to operate in compliance with the interim status standards until such time that final status permit standards are implemented for that unit. Final status permit standards can be implemented either through a permit

modification or issuance of a new permit. The Part A Permit Application Form for each unit group identifies the activities being conducted in that unit group and wastes that are potentially being managed in the unit group.

There are no specific operating standards and conditions specified in the current (March 31, 2012) Permit for the WESF unit group. Any treatment, storage, or disposal (TSD) activities conducted in the WESF unit group are therefore subject to interim status standards. According to the current Part A Permit Application Form for WESF, dated September 19, 2008, those TSD activities include storage of radioactive mixed waste in capsules in pool cells 1 through 8 and storage of small amounts of mixed waste in containers in hot cells A through F. These are identified in the Part A Permit Application Form as miscellaneous storage units for which there are no interim status standards. Since the wastes are in containers the WESF could have been identified as a container storage unit for which there are interim status standards. WESF is subject to the site wide contingency plan that is in the active Permit.

In preparation for conducting this inspection, I reviewed the 9/19/08 Part A Permit Application Form for WESF. During that review, I noted that in Section IV of Part A Permit Application Form the Physical Location of the facility is given as 825 Jadwin, Richland, Washington. This is actually the address of the federal building in Richland which is approximately 5 miles away from the southern boundary of the Hanford facility and 20 miles from the WESF unit group. WAC 713-303-803(3)(b) requires the Part A Permit Application Form of the final facility permit application must include among other things the location, including latitude and longitude, of the facility. The Part A Permit Application Form does not include latitude and longitude of the facility. This is a common finding for all of the Part A Permit Application forms reviewed during inspections conducted at Hanford by EPA in the past 18 months.

Site Hazardous Waste Information: According to the 9/19/08 Part A Permit Application Form associated with the WESF unit group, Hanford informed Ecology that it intended to manage five characteristic dangerous wastes in the units associated with the WESF, specifically, wastes containing barium, cadmium, chromium, lead, and silver. Facility personnel told us that most of the wastes managed in the WESF are classified as radioactive mixed waste. The Department of Energy, the Washington State Department of Health, the Washington State Department of Ecology, and the EPA all have regulatory authority over mixed waste. During the inspection we also observed that fluorescent lamps, solvent and oil contaminated rags from the maintenance shop, waste circuit boards from maintenance of monitoring equipment were also generated in the WESF.

Section D: Description of Inspection

Purpose of Inspection: This was a focused compliance evaluation inspection (FCI) of the WESF to assess compliance with the Hanford Facility Resource Conservation and Recovery Act Permit, Permit Revision 8C, Class 1 Modification, dated March 31, 2012 (Permit) which incorporates WAC 173-303-400 interim status standards and for compliance with the following regulations of Washington's federally authorized hazardous waste program: WAC 173-303-170 through 230 standards for hazardous waste generators; WAC 173-303-573 standards for universal waste; and WAC 173-303-515 requirements for management of used oil.

Inspection Entry and Opening Conference: On November 13, 2014 at approximately 9:00 am I spoke to Cliff Clark, the Hanford DOE Regulatory Compliance Manager, by phone. I told him that we would be inspecting the WESF on November 19 and 20. I confirmed that we were planning to meet at the Federal Building in Richland at 1:00 pm on November 19 to begin the inspection.

The EPA members of the inspection team arrived at the Federal Building in Richland on November 19, 2014 at 1:00 pm. We were met in the lobby by Tony McKarns of DOE. He escorted us to a conference room. Around 1:10 pm I presented my inspector credentials and we began the opening conference. Seventeen people were in attendance. DOE regulatory compliance office was represented by Tony

McKarns and Al Farabee. For a complete list of attendees, see the sign-in sheet in Attachment C or on the document disk which contains all the documents we requested during our inspection. Mr. McKarns accompanied us on the remainder of the inspection. Joel Williams who is the primary contact for CHPRC and Jerry Cammann with Mission Support Alliance (MSA) also accompanied us on the entire inspection.

In the opening conference, I explained that this would be an EPA lead inspection and that we would be evaluating compliance with the Permit and the Ecology federally-authorized Dangerous Waste Regulations. After answering a few logistical questions regarding file reviews and document requests we ended the opening conference. We then were issued dosimeters by DOE and boarded a DOE van for the 30 minute trip to the WESF. Nancy Ware and Jared Mathey from Ecology also accompanied us on the inspection.

Inspection Summary:

During the tour of the WESF, we were not able to observe what was in hot cells A through E because these cells were not equipped with operational lights. Jan Penock, a WESF manager, explained that the lights in hot cells A through E stopped working 10 years ago.

We entered the pool room and observed canister storage in the pool cells. We looked at the universal waste lamps accumulation area as well as satellite accumulation areas for waste circuit boards and solvent contaminated shop towels which were located outside of the WESF Building 225-B.

We observed that there was no waste in the less than 90 day waste accumulation area which is used for accumulation of facility maintenance waste. Additionally, we looked for waste that was being generated or otherwise managed in these areas that had not been identified by facility representatives. We compared the dangerous waste management in these areas to the applicable permit or regulatory conditions. We also reviewed some files while on site on November 19 and 20, 2014.

For each of the areas we inspected, we requested that documents be sent to us for review following the onsite portion of the inspection. The documents were compiled by Mr. Williams. Mr. McKarns of DOE placed all of the requested files, including the ones we had reviewed on site, on a compact disk (CD) (see attachment C) and sent them to me on December 17, 2014.

The areas inspected are listed below. In addition to our observations, our sources of information for each area visited are given below (unless otherwise noted elsewhere in this report).

Pool Cells in Building 225-B, Contact: Jan Penock
We observed canisters containing either cesium salts or strontium salts in pool cells 1, 3, 4, 5, 6, and 7. According to Ms. Penock there were 1936 canisters in the pool cells and the last one was placed there in 1984.

Hot Cells in Building 225-B, Contact: Jan Penock
Ms. Penock said that hot cell B contained small bowl shaped containers, referred to as "boats", that contained small amounts of floor sweepings and dangerous waste debris from processing that occurred prior to 1985. She further stated that hot cell C was storing pieces of old piping that contained dangerous waste residues generated prior to 1985. Because of the lack of lighting, we were unable see these wastes in the hot cells. According information that Ecology had obtained from the facility, hot cell B held approximately 0.6 kg of radioactive mixed waste and hot cell C held approximately 1.2 kg of radioactive mixed waste.

Universal Waste Accumulation Area in Building HS-023, Contact: Bill Cook
We observed one closed, labeled and dated box of 4-foot fluorescent lamps being managed as universal waste, other small boxes that according to labels contained a variety of other lamps, and a container of used aerosol cans awaiting shipment to the Central Recycling Center where it will be determined if they are waste or not.

Outside Satellite Accumulation Areas near Building 225-BE Maintenance Shop, Contact: Bill Cook
We observed one drum containing waste circuit boards and electronics waste, and one drum containing used shop towels sitting inside of a metal storage locker. Mr. Cook said that the shop towels are sent to an off-site laundry.

Any issues or items of interest that the inspection team identified are discussed below.

During the inspection, I asked what the plans were for closing the WESF unit group. Ms. Penock explained that they currently do not have a closure plan or closure schedule in place but they are working with Ecology to develop final closure plans and schedules. She said that the capsules containing either cesium salts or strontium salts will be removed from the pool into hot cells F and G and overpacked into canisters that are suitable for dry storage. The repackaged capsules will then be placed in a dry storage unit, which has yet to be funded or constructed. She said that before that can happen the ventilation system in hot cells F and G needs to be replaced. In order to do that they plan to decommission dry cells A through E and their ventilation systems by filling the dry cells and ventilation systems with grout. She further stated that they do not intend to remove the waste from hot cells B and C prior to filling them with grout. I asked what they will do with the dry cells once they are filled with grout. She said that the building may be torn down and placed in one of the onsite trenches, or they may leave the building in place. She said that they will be consulting with private industry to decide the best process for overpacking the canisters and the best final disposition for the dry cells. EPA staff believes that if they grout the hot cells without removing the waste and then leave the building standing they will be closing with waste in place and would be required to close as a landfill.

Following the inspection I obtained copies from Ecology of the reports submitted by DOE which are intended to verify that waste in storage over one year at the Hanford facility is managed according to the conditions in 40 C.F.R. § 268.50. These reports covered the period from January 2010 to the present. As I reviewed the reports I noted that the wastes in hot cell B and hot cell C are not listed in the report. They were generated in the 1980s and have not been moved since they were generated. They have been in storage well past the year allowed in the Land Disposal Restriction (LDR) regulations. Since the hot cells have been identified as miscellaneous storage units, under interim status no inspections are required. If these cells were being managed as dangerous waste container storage units, the regulations require that they be inspected weekly. Inspections could not be conducted because there are no lights in the cells and the radiation activity levels in the cells are too high to allow entry into the cells. For these reasons it is not possible to visually inspect the containers of waste in hot cells B and C.

On November 20, 2014 at 8:00 am we met at CHPRC offices located at 2420 Stevens in Richland to conduct a file review. During the file review we reviewed inspection logs for the pool cells. Representatives of CHPRC explained that the inspections are conducted by reading conductivity, flow rate, and beta radiation monitors for the pool water. They further explained that if there were a leak in one of the canisters of waste it would result in an increase in water conductivity and beta activity. They said that the facility operates 24 hours per day with three shifts. We observed that the monitor readings are made once per shift each day and recorded on an inspection log sheet.

We also reviewed the contingency plan for WESF. The regulations require that an owner/operator have a contingency plan at his facility for use in emergencies or sudden or non-sudden releases which

threaten human health or the environment. In previous inspections of the Hanford facility, we learned that the RCRA contingency plan is "imbedded" into the Building Emergency Plan (BEP) for each unit group. I reviewed the BEP for WESF. As has been seen for other unit groups at Hanford the BEP specifies that "Sections 1.5, 3.1, 4.0, 7.1, 7.1.1, 7.1.2, 7.2, 7.2.1, 7.2.2, 7.2.3, 7.2.4,7.2.5, 7.2.5.1, 7.3 8.2, 8.4, 9.0, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 11.0, 12.0, and 13.0 of the BEP are enforceable sections meeting RCRA contingency planning requirements." I noted that the BEP refers to standards or procedures set out in the Hanford Contingency Management Plan, which covers the whole Hanford facility and references the BEPs. In addition to addressing releases of RCRA regulated waste, the HCMP includes procedures for addressing releases of non-RCRA regulated radioactive material and waste.

Among other things, contingency plans are required to have a current list of names, addresses, and phone numbers (office and home) of all persons qualified to act as the emergency coordinator. In reviewing the BEP for WESF, I noted that the BEP states that the building emergency director is the emergency coordinator, and that a list of building emergency directors and their work phone numbers is included in Section 13 of the BEP. I observed that instead of a list of names of all persons qualified to act as the emergency coordinator, Section 13 of the BEP only has a general phone number with no name. In the event nobody is available to answer at the general phone number, the Hanford Patrol phone number is given as a backup phone number. By calling the Hanford Patrol the caller may obtain a list of home phone numbers of persons qualified to act as the emergency coordinator.

Closing Conference: Following the file review on November 20, 2014 we conducted a closing conference with representatives of the DOE and their contractors at 10:00 a.m. I explained that I would need to wait until I received and reviewed the documents I had requested before I could determine if there were compliance issues. I thanked the facility representatives for their time and cooperation and we ended the inspection and left the site at 10:30 a.m.

Post inspection record review: On December 17, 2014, following the onsite inspection, I received a disk that contained documents I had requested for further review (see Attachment C for a list of the documents requested and provided on the disk). The documents included inspection logs for the daily pool cell monitoring, logs for general inspections done outside of building 225-B, and training records. I reviewed all of the documents on the disk and did not identify any issues.

ATTACHMENT A

Aerial Photo

bing Maps

My Notes

On the go? Use **m.bing.com** to find maps, directions, businesses, and more

Bird's eye view maps can't be printed, so another map view has been substituted.

ATTACHMENT B

Photo Log

USDOE Hanford (WESF)
WA7890008967
November 2014 RCRA Inspection Report

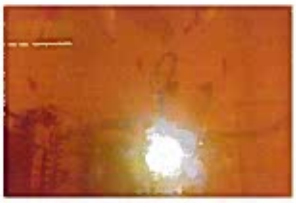
Photograph Log
Photographer: Matt Vojik
Date: 11/19/14
Camera model: Panasonic DMC-FH25
Facility: Hanford – Waste Encapsulation Storage Facility (WESF)
RCRA ID: WA7890008967

- P1010643 – View of capsules inside pool cells 3 and 4.
- P1010644 – View of the pool cells.
- P1010645 – View of hot cell F on the left and hot cell G on the right.
- P1010646 – View of the interior of hot cell G.
- P1010647 – View of the interior of hot cell F.
- P1010648 – View of the interior of hot cell F.
- P1010649 – Information board describing the encapsulation process.
- P1010650 – Information board entitled "Capsule Extended Storage Project.".
- P1010651 – Information board providing and overview of the facility.
- P1010652 – Radiological status map posted at the facility.
- P1010653 – Radiological status map posted at the facility.
- P1010654 – Radiological status map posted at the facility.
- P1010655 – View of boxes located inside universal waste storage area HS-023.
- P1010656 – View of boxes located inside universal waste storage area HS-023.
- P1010657 – View of drums located inside universal waste storage area HS-023.
- P1010658 – View of a box located inside universal waste storage area HS-023.
- P1010659 – View of drums located inside universal waste storage area HS-023.
- P1010660 – View of the exterior of universal waste storage area HS-023.
- P1010661 – View of a drum located inside the satellite accumulation area at Building 225BE.
- P1010662 – Detail view of a drum located inside the satellite accumulation area at Building 225BE.
- P1010663 – View of a container labeled "Shop Towels" located at Building 225BE.
- P1010664 – View of the exterior of the satellite accumulation area and the used shop towel accumulation areas at Building 225BE.
- P1010665 – Facility emergency response information board.

P1010643.JPG

P1010644.JPG

P1010645.JPG



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ATTACHMENT C

Documents collected from the facility

1. Dangerous Waste Permit Application Part A Form for WESF
2. Document request response letter
3. Document request response table
4. Attendance log

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Dangerous Waste Permit Application Part A Form

Date Received	Reviewed by:	Date:	09222008
Month Day Year	Approved by:	Date:	09222008
09192008			

I. This form is submitted to: (place an "X" in the appropriate box)

☒	Request modification to a final status permit (commonly called a "Part B" permit)
☐	Request a change under interim status
☐	Apply for a final status permit. This includes the application for the initial final status permit for a site or for a permit renewal (i.e., a new permit to replace an expiring permit).
☐	Establish interim status because of the wastes newly regulated on: (Date)
	List waste codes:

II. EPA/State ID Number

WA7890008967

III. Name of Facility

US Department of Energy – Hanford Facility

IV. Facility Location (Physical address not P.O. Box or Route Number)

A. Street

825 Jadwin

City or Town	State	ZIP Code
Richland	WA	99352

County Code (if known)	County Name
005	Benton

B. Land Type	C. Geographic Location Latitude (degrees, mins, secs)	Longitude (degrees, mins, secs)	D. Facility Existence Date Month Day Year
F	Refer to TOPO Map (Section XV.)		03 02 1943

V. Facility Mailing Address

Street or P.O. Box

P.O. Box 550

City or Town	State	ZIP Code
Richland	WA	99352

VI. Facility contact (Person to be contacted regarding waste activities at facility)

Name (last)	(first)
Brockman	David
Job Title	**Phone Number (area code and number)**
Manager	(509) 376-7395

Contact Address

Street or P.O. Box		
P.O. Box 550		
City or Town	**State**	**ZIP Code**
Richland	WA	99352

VII. Facility Operator Information

A. Name	Phone Number
Department of Energy Owner/Operator CH2M HILL Plateau Remediation Company Co-Operator for Waste Encapsulation and Storage Facility*	(509) 376-7395 (509) 376-0556*
Street or P.O. Box	
P.O. Box 550 P.O. Box 1600 *	

City or Town	State	ZIP Code
Richland	WA	99352

B. Operator Type F

C. Does the name in VII.A reflect a proposed change in operator? ☐ Yes ☒ No Co-Operator* change

If yes, provide the scheduled date for the change: Month 10 Day 01 Year 2008

D. Is the name listed in VII.A. also the owner? If yes, skip to Section VIII.C. ☐ Yes ☒ No

VIII. Facility Owner Information

A. Name	Phone Number (area code and number)
David A. Brockman, Operator/Facility-Property Owner	(509) 376-7395
Street or P.O. Box	
P.O. Box 550	

City or Town	State	ZIP Code
Richland	WA	99352

B. Owner Type F

C. Does the name in VIII.A reflect a proposed change in owner? ☐ Yes ☒ No

If yes, provide the scheduled date for the change: Month Day Year

IX. NAICS Codes (5/6 digit codes)

A. First		B. Second	
562121	Waste Treatment & Disposal	924110	Administration of Air & Water Resource & Solid Waste Management Programs
C. Third		**D. Fourth**	
541713	Research & Development in the Physical, Engineering, & Life Sciences		

X. Other Environmental Permits (see instructions)

A. Permit Type	B. Permit Number	C. Description
E	AIR-02-1218	WAC 246-247, Radiation Protection -- Air Emissions
E	EPA-1999-8-12	40 CFR 61, Subpart H, NESHAPS

XI. Nature of Business (provide a brief description that includes both dangerous waste and non-dangerous waste areas and activities)

WESF was constructed on the west end of B Plant in 1974 to encapsulate and store cesium chloride and strontium fluoride salts that had been separated from Hanford's high-level radioactive tank waste. WESF had stored the encapsulated salts since operations began in 1974 and initiated mixed waste management activities on July 14, 1997. The waste is stored in stainless steel capsules whose maximum outer height is approximately 53 centimeters (~21 inches) and maximum diameter is approximately 8 centimeters (~3 inches). WESF is a two-story, 20,000 square-foot building 157 feet long and 40 feet high. It is constructed of steel reinforced concrete. It is partitioned into seven hot cells, the hot cell service area, operating areas, building service areas, and the pool cell area.

The seven hot cells are labeled A through G and activities within the hot cells are performed remotely using manipulators. Waste and drum load out is performed in hot cell A. Hot cells B through E were used to convert strontium nitrate and cesium carbonate into strontium fluoride and cesium chloride salts. Only hot cells F and G will remain active for cesium/strontium capsule storage. The hot cell service area is located on the south side of the hot cells and is used for access into hot cells A and G. The operating areas and other building service areas associated with the hot cells provide areas for instrumentation monitoring, utility support, or manipulator repair as required.

The pool cell area consists of 12 pools lined with stainless steel. Pools 9, 10, and 11 are outside the TSD unit boundary. Pool cells 1 through 8 and 12 can be used for capsule storage and are filled with water to a depth of approximately 13 feet. Each pool is equipped with a monitoring system to detect any leakage from capsules. The water cools the cesium/strontium capsules and provides radiation shielding. Pool cell 12 is used to move capsules from hot cell G and from pool cell to pool cell.

The maximum process design capacity for miscellaneous storage in pool cells 1 through 8 and 12 is approximately 4,484 liters (~1,185 gallons) and for Process cells A through G is approximately 56 liters (~15 gallons). The total maximum process design capacity for miscellaneous storage in the pool cells and process cells is approximately 4,540 liters (~1,200 gallons).

EXAMPLE FOR COMPLETING ITEMS XII and XIII (shown in lines numbered X-1, X-2, and X-3 below): A facility has two storage tanks that hold 1200 gallons and 400 gallons respectively. There is also treatment in tanks at 20 gallons/hr. Finally, a one-quarter acre area that is two meters deep will undergo *in situ vitrification.*

Section XII. Process Codes and Design Capacities								Section XIII. Other Process Codes							
Line Number		A. Process Codes (enter code)			B. Process Design Capacity		C. Process Total Number of Units	Line Number		A. Process Codes (enter code)			B. Process Design Capacity		C. Process Total Number of Units	D. Process Description
					1. Amount	2. Unit of Measure (enter code)							1. Amount	2. Unit of Measure (enter code)		
X	1	S	0	2	1,600	G	002	X	1	T	0	4	700	C	001	In situ vitrification
X	2	T	0	3	20	E	001									
X	3	T	0	4	700	C	001									
	1	S	9	9	4,540	L	001		1							
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1	5							1	5							
1	6							1	6							
1	7							1	7							
1	8							1	8							
1	9							1	9							
2	0							2	0							
2	1							2	1							
2	2							2	2							
2	3							2	3							
2	4							2	4							
2	5							2	5							

XIV. Description of Dangerous Wastes

Example for completing this section: A facility will receive three non-listed wastes, then store and treat them on-site. Two wastes are corrosive only, with the facility receiving and storing the wastes in containers. There will be about 200 pounds per year of each of these two wastes, which will be neutralized in a tank. The other waste is corrosive and ignitable and will be neutralized then blended into hazardous waste fuel. There will be about 100 pounds per year of that waste, which will be received in bulk and put into tanks.

Line Number	A. Dangerous Waste No.	B. Estimated Annual Quantity of Waste	C. Unit of Measure	D. Processes (1) Process Codes	D. Processes (2) Process Description [If a code is not entered in D (1)]
X 1	D 0 0 2	400	P	S 0 1 T 0 1	
X 2	D 0 0 1	100	P	S 0 2 T 0 1	
X 3	D 0 0 2				Included with above
1	D 0 0 5	5,000	K	S 9 9	Includes Debris
2	D 0 0 6		K	S 9 9	Includes Debris
3	D 0 0 7		K	S 9 9	Includes Debris
4	D 0 0 8		K	S 9 9	Includes Debris
5	D 0 1 1		K	S 9 9	Includes Debris
6					
7					
8					
9					
10					
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12					
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25					

XV. Map

Attach to this application a topographic map of the area extending to at least one (1) mile beyond property boundaries. The map must show the outline of the facility; the location of each of its existing and proposed intake and discharge structures; each of its dangerous waste treatment, storage, recycling, or disposal units; and each well where fluids are injected underground. Include all springs, rivers, and other surface water bodies in this map area, plus drinking water wells listed in public records or otherwise known to the applicant within ¼ mile of the facility property boundary. The instructions provide additional information on meeting these requirements.

Topographic map is located in the Ecology Library

XVI. Facility Drawing

All existing facilities must include a scale drawing of the facility (refer to instructions for more detail).

XVII. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, recycling, and disposal areas; and sites of future storage, treatment, recycling, or disposal areas (refer to instructions for more detail).

XVIII. Certifications

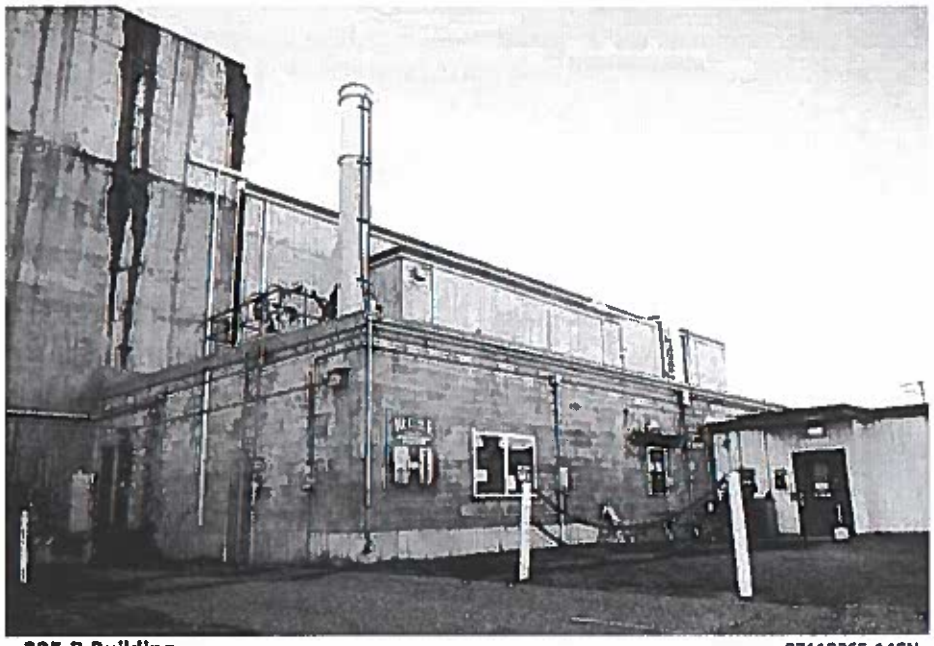
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Operator Name and Official Title (type or print) David A. Brockman, Manager U.S. Department of Energy Richland Operations Office	**Signature**	**Date Signed** 9/19/08
Co-Operator* Name and Official Title (type or print) John G. Lehew, III President and Chief Executive Officer CH2M HILL Plateau Remediation Company	**Signature**	**Date Signed** 9/2/08
Co-Operator – Address and Telephone Number* P.O. Box 1600 Richland, WA 99352 (509) 376-0556		
Facility-Property Owner Name and Official Title (type or print) David A. Brockman, Manager U.S. Department of Energy Richland Operations Office	**Signature**	**Date Signed** 9/19/08

Comments

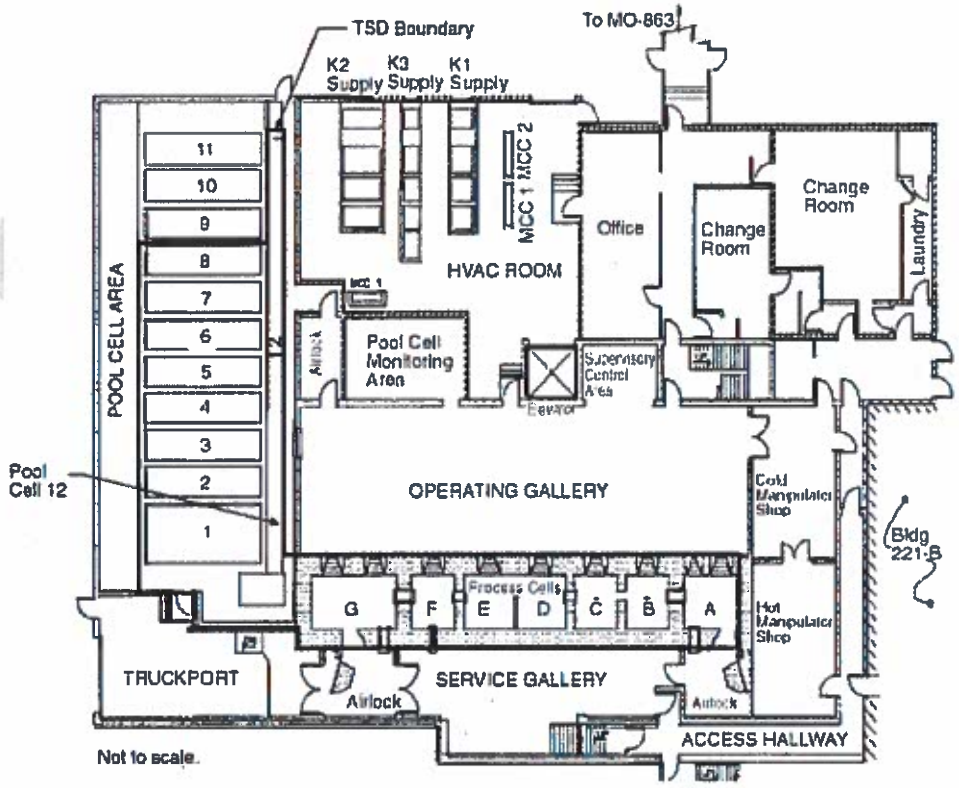
In Section VII. Facility Operator Information, there is no change to DOE as the Facility Owner/Operator; only a change in Co-Operator*. The change in Co-Operator* will be effective October 1, 2008.

Waste Encapsulation and Storage Facility



225-B Building

97110265-14CN
Photo Taken 1997

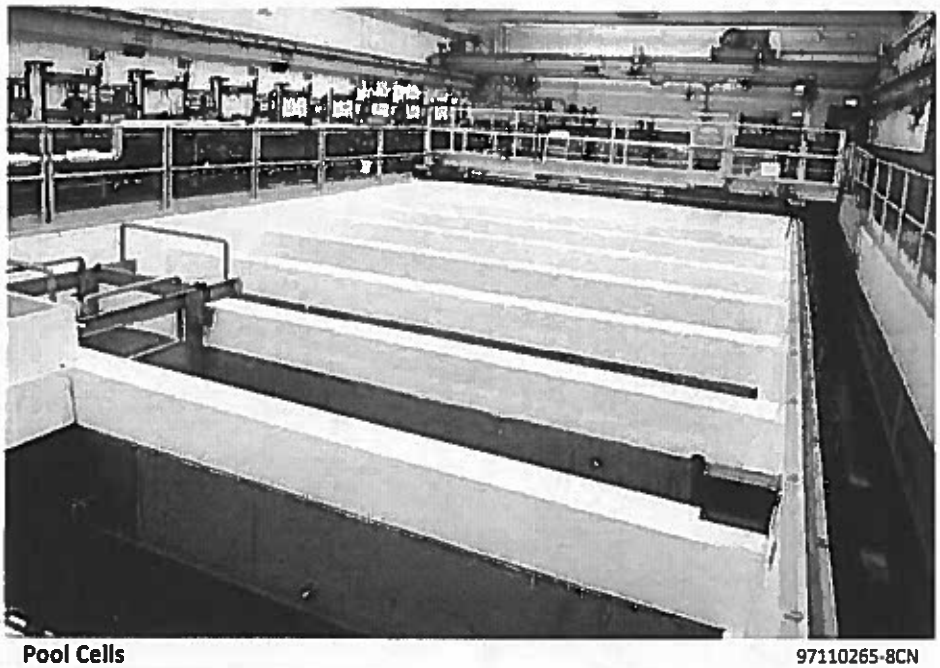


Waste Encapsulation and Storage Facility Pool and Process Cells

H97110237.2

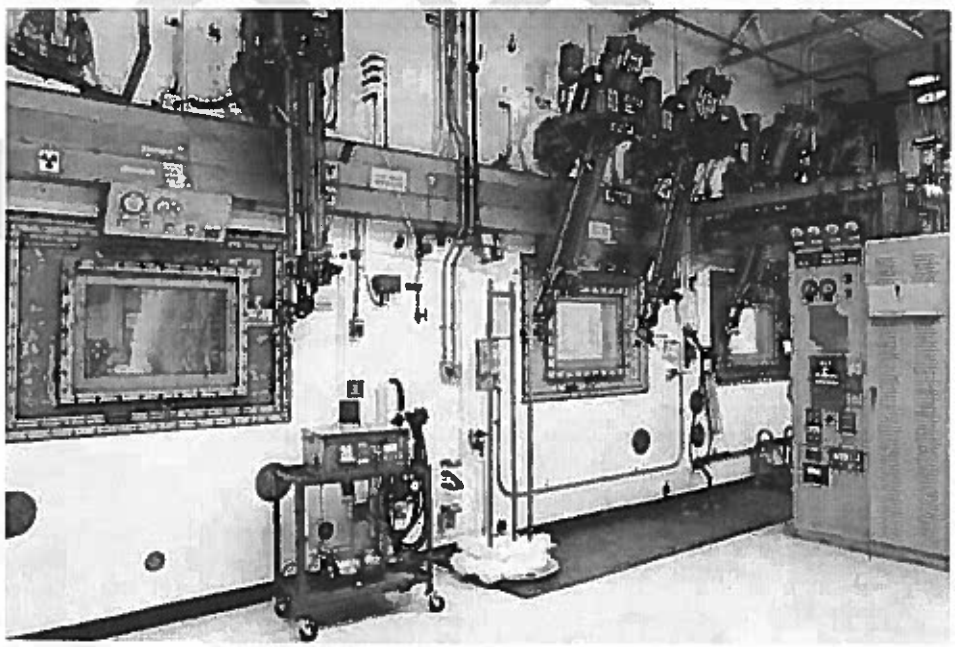
H97110237.2W

Waste Encapsulation and Storage Facility



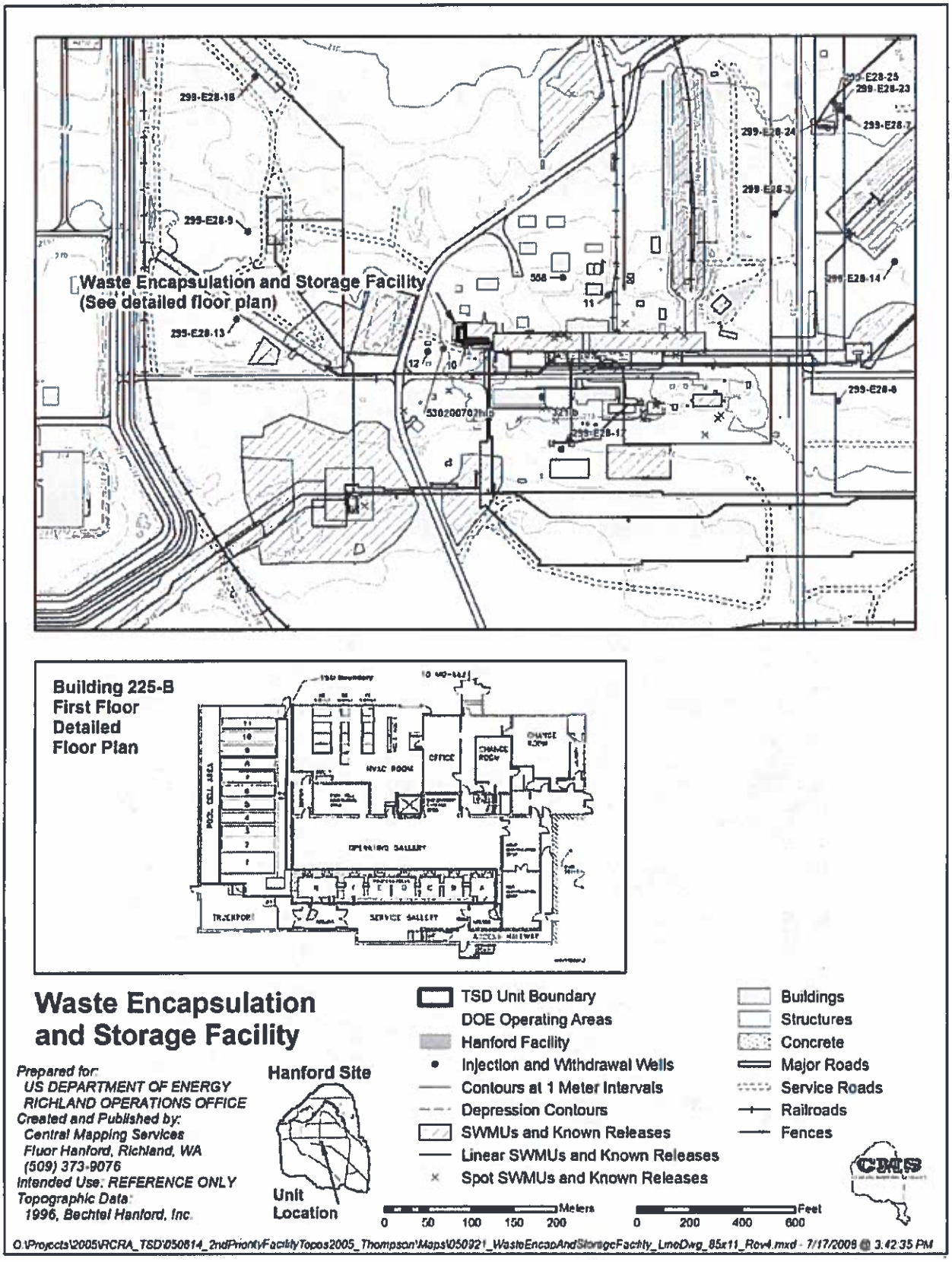
Pool Cells

97110265-8CN
Photo Taken 1997



Process Cells

97110265-2CN
Photo Taken 1997


299-E28-18
299-E28-9
299-E28-13
Waste Encapsulation and Storage Facility
(See detailed floor plan)
299-E28-25
299-E28-23
299-E28-7
299-E28-24
299-E28-3
299-E28-14
299-E28-8
299-E28-1
Building 225-B
First Floor
Detailed
Floor Plan
OFFICE
CHANGE ROOM
HVAC ROOM
OPERATING GALLERY
SERVICE GALLERY
Waste Encapsulation
and Storage Facility
Prepared for:
US DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
Created and Published by:
Central Mapping Services
Fluor Hanford, Richland, WA
(509) 373-9076
Intended Use: REFERENCE ONLY
Topographic Data:
1996, Bechtel Hanford, Inc.
Hanford Site
Unit
Location
TSD Unit Boundary
DOE Operating Areas
Hanford Facility
Injection and Withdrawal Wells
Contours at 1 Meter Intervals
Depression Contours
SWMUs and Known Releases
Linear SWMUs and Known Releases
Spot SWMUs and Known Releases
Buildings
Structures
Concrete
Major Roads
Service Roads
Railroads
Fences
Meters
0 50 100 150 200
Feet
0 200 400 600
O:\Projects\2005\RCRA_TSD\050814_2ndPriorityFacilityTopos2005_Thompson\Maps\050921_WasteEncapAndStorageFacility_LmeDwg_85x11_Rev4.mxd - 7/17/2008 @ 3:42:35 PM

Received

DEC 17 2014

Office of Air, Waste & Toxics

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

15-ESQ-0021

DEC 15 2014

Mr. J. L. Boller
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue, Suite 900 (AWT-150)
Seattle, Washington 98101

Dear Mr. Boiler:

INFORMATION REQUESTED IN SUPPORT OF THE NOVEMBER 19 AND 20, 2014, U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) TREATMENT, STORAGE, AND DISPOSAL (TSD) UNIT AND WASTE GENERATOR ACTIVITIES INSPECTIONS OF THE WASTE ENCAPSULATION AND STORAGE FACILITY IN 200 EAST

On November 19 and 20, 2014, EPA along with the State of Washington Department of Ecology conducted TSD and waste generator activity inspections at the Waste Encapsulation and Storage Facility (WESF) in 200 East. During the November 20, 2014, inspection document review EPA requested the following:

- Request of copy of the current WESF Equipment Deficiency Identification and Documentation List (EDL) list that identifies "EDL-14-WESF-019," dated 4-13-2014
- Copy of EDL-14-WESF-019 Work Request
- Copies of the daily operation logs from August 2014 through November 2014
- Copies of the annual work packages for inspection and walkdown of the outside of WESF for calendar years 2012, 2013, and 2014
- Copies of training records for NCO (2), ECO (1), WESF Supervisor
- Copies of the training records for the four (4) newly reassigned to WESF NCOs and provide the starting dates and training completed dates
- Copies of the Attendance Rosters

The documents requested by EPA have been placed into an electronic format on a compact disc. The disc contains an index or table of files that are on the disc.

If you have any questions, please contact me, or your staff may contact Ed MacAlister, Director, Environmental, Safety, and Quality Division, on (509) 373-0462.

Sincerely,

Ed MacAlister for

Jeffrey A. Frey, Acting Assistant Manager
for Safety and Environment

ESQ:ACM

Enclosures

cc w/encls:
K. A. Conaway, Ecology
M. Vojik, EPA Region 10
Administrative Record, TSD: WESF
Ecology NWP Library (CD)
Environmental Portal, LMSI, A3-01
HF Operating Record (J. K. Perry, MSA, A3-01)

cc w/o encls:
G. Bohnee, NPT
R. Buck, Wanapum
S. L. Dahl-Crumpler, Ecology
R. H. Engelmann, CHPRC
S. Harris, CTUIR
J. A. Hedges, Ecology
R. Jim, YN
K. McNeill, EPA Region 10
D. Rowland, YN
J. R. Seaver, CHPRC

U.S. ENVIRONMENTAL PROTECTION AGENCY INSPECTION OF THE WASTE ENCAPSULATION AND STORAGE FACILITY TREATMENT, STORAGE, AND DISPOSAL UNIT, SATELITTE ACCUMULATION AREA, AND UNIVERSAL WASTE AREA
REQUEST FOR DOCUMENTS, RECORDS, AND INFORMATION RESPONSE TABLE
NOVEMBER 19 AND 20, 2014

The following tables are the documents, records, and information requests by the U.S Environmental Protection Agency (EPA) to the U.S. Department of Energy (DOE)/CH2M Hill Plateau Remediation Company (CHPRC) during the Waste Encapsulation and Storage Facility (WESF) treatment, storage, and/or disposal (TSD) Unit, satellite accumulation area (SAA), and universal waste area from November 19 and 20, 2014.

Request Number	Date of Request	EPA Document/Records/Information Requests	DOE/CHPRC Response to Documents, Records, and/or Information Requests	Number of Pages
1	11-20-2014	Request of copy of the current WESF EDL list that identifies "EDL-14-WESF-019," dated 4-13-2014	Copy of the following requested document: • WESF Equipment Deficiency Identification and Documentation List (EDL) – Active List, EDL # 14-WESF-019, dated 4-13-2014 (Page 2 of 4)	4
2	11-20-2014	Copy of EDL-14-WESF-019 Work Request	***Note: On the EDL List provided in the EPA Request Number 1 for "14-WESF-019 – Pool cell level indicator" identified "Work Package/Status – EL-14-07563/M." This pool indicator is located in Pool Cell 11 that is designed to be dry. Pool Cell 11 has "ion exchangers" installed within the pool cell that polishes circulated pool cell water from Pool Cells 1, 3-7 and 12. All water is contained in pipes and tanks within this dry pool cell. Repair of the pool indicator was put on a lower priority for repair/replacement. However, after review by WESF Engineering it was determined that due to the type and age of this pool indicator equipment, this equipment is no longer manufactured and replacements cannot be ordered. WESF Engineering is looking into a redesign of this pool indicator and other indicators that may have this issue. Once a decision has been made, the identified work package will be prepared or another work package could be prepared for installation and testing of the new pool indicator(s).***	
3	11-20-2014	Copies of the daily operation logs from August 2014 through November 2014	Copies of the following requested daily operation inspection sheet documents: • EO-040-001 "WESF NCO Surveillance," Appendix B – WPMCS (1X-Beta-TK100) and Appendix N – Notes Section and Sign-Off from August 1, 2014 through August 31, 2014	93

			(31 documents) • EO-040-001 "WESF NCO Surveillance," Appendix B – WPMCS (1X-Beta-TK100) and Appendix N – Notes Section and Sign-Off from September 1, 2014 through September 30, 2014 (30 documents) • EO-040-001 "WESF NCO Surveillance," Appendix B – WPMCS (1X-Beta-TK100) and Appendix N – Notes Section and Sign-Off from October 1, 2014 through October 31, 2014 (31 documents) • EO-040-001 "WESF NCO Surveillance," Appendix B – WPMCS (1X-Beta-TK100) and Appendix N – Notes Section and Sign-Off from November 1, 2014 through November 16, 2014 (16 documents)	90 93 48
4	11-20-2014	Copies of the annual work packages for inspection and walkdown of the outside of WESF for calendar years 2012, 2013, and 2014	Copies of the following requested annual work package documents: • Work Document EL-12-03989 "WESF: 365D Inspec/Walkdown Outside of the TSD," dated 6-11-2012 • Work Document EL-13-02809 "WESF: 365D Inspec/Walkdown Outside of the TSD," dated 6-19-2013 • Work Document EL-14-02280 "WESF: 365D Inspec/Walkdown Outside of the TSD," dated 6-16-2014	 11 18 13
5	11-20-2014	Copies of training records for NCO (2), ECO (1), WESF Supervisor	Copies of the following requested training records: • WESF Nuclear Chemical Operator (NCO) (2) – Williams B. Cook – James E. Wabaunsee • WESF Environmental Compliance Officer (ECO) (1) – Dave J. Watson • WESF Operations Supervisor (1) – Kathleen A. Burton	 3 4 2 4
6	11-20-2014	Copies of the training records for the four (4) newly reassigned to WESF NCOs and provide the starting	Copies of the following requested newly reassigned NCO training records:	

		dates and training completed dates.	• Nuclear Chemical Operator (NCO) (4) – Paul L. Carey – Michael A. Garity – Bruce E. Godfrey – Dana W. Wiberg ***Note: The training start date for the four (4) NCOs newly transferred to WESF was "9-29-2014" for three (3) of them, and "10-01-2014" for the fourth NCO. In reviewing their training records (that are being provided to EPA), DOE/CHPRC found that a majority of the required training based on the "WESF Dangerous Waste Training Plan, Table 4-1 Training Course Matrix, Item 6 – NCOs" has already been completed. There is one training requirement, "Course Number 400500 - WESF Surveillance NCO Initial Qualification" that is still ongoing and will be completed by March 2015. Completion of required training within 6 months of the new job assignment as described in the WESF Dangerous Waste Training Plan complies with the "6-month training" window in accordance with 40 CFR § 256.16, Personnel Training and WAC 173-303-330, Personnel Training.*** ***A copy of the PRC-STD-TQ-40231 "Waste Encapsulation and Storage Facility Dangerous Waste Training Plan," Revision 0, Change 2, dated 05-09-2013 has been provided as an aid in identifying the required training requirements.***	 3 3 4 3 15
7	11-20-2014	Copies of the Attendance Rosters	Copies of the following requested Attendance Rosters: • Attendance Roster dated 11-19-2014 • Attendance Roster, dated 11-20-2014	 1 1

ATTENDANCE ROSTER

Inspection Title:
(CHPRC) EPA INSPECTION OF THE WASTE ENCAPSULATION STORAGE FACILITY
INSPECTION NUMBER: 2015-013
Pre-Briefing / Inspection

Date:
NOVEMBER 19 AND 20, 2014

AGENCY	NAME	LOCATION:
EPA	JOEL WILLIAMS	WESF

Please sign Name, CO/ORG, and Phone Numbers

Name	CO/ORG	Phone Number (s)
Joel Williams Jr.	CHPRC-EP	376-4782
Marie T Gillespie	CHPRC-WESF	373-0771
Brett M Barnes	CHPRC-EP	376-3640
LAURA CUSACK	CHPRC	376-1595
Dan Flyckt	CHPRC	372-3142
Dan Pennock	CHPRC	373-7210
Stephanie Johansen	CHPRC	373-1031
Eric Faust	RL/AMSE	376-4607
TONY MCKARNS	DOE	376-8987
Nancy Ware	Ecology	372-7912
JARED MATHEW	ECOLOGY	372-7949
Stephanie Schleif	Ecology	372-7929
MATT VOJIK	EPA	206-553-0716
AL Farabee	DOE	509-376-8089
~~Mike~~-Telecon		
Mike Collins	DOE	
Rick Engelman	CHPRC	
Kym Tarter	CHPRC	
Dave Watson	CHPRC	
~~Rick Barnes~~ Rick Wilbanks	CHPRC	
Bill Cook	CHPRC-NCO	
Melanie Myers	CHPRC-WMR	

ATTENDANCE ROSTER

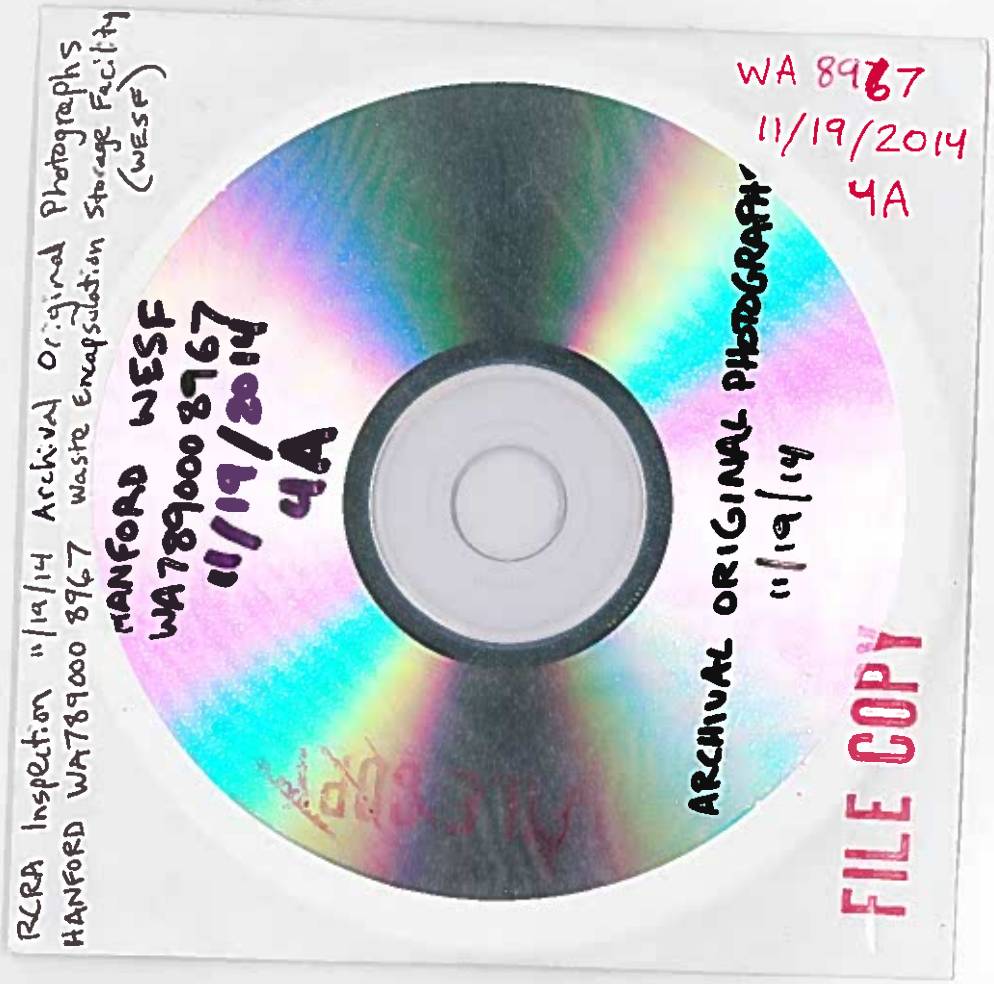
Inspection Title:
(CHPRC) EPA INSPECTION OF THE WASTE ENCAPSULATION STORAGE FACILITY
INSPECTION NUMBER: 2015-013 Records Reviewed
Post-Briefing

Date:
NOVEMBER 19 AND 20, 2014

AGENCY	NAME	LOCATION:
EPA	JOEL WILLIAMS	WESF

Please sign Name, CO/ORG, and Phone Numbers

Name	CO/ORG	Phone Number (s)
Joel F Williams JL	CHPRC-EP	376-4782
Kym Tarter	CHPRC	373-3514
David Watson	CHPRC	373-3250
JARED MATHEY	ECOLOGY	372-7944
MATT VOJIK	EPA	206-553-0716
Jack Boller	EPA	
TONY MCKARNS	DOE	376-8981
Michael Collins	DOE	3766536
AL Farabee	DOE	376-8089
Stephanie Johansen	CHPRC	
JAN PENNOCK	CHPRC	
Rick Wilbanks	CHPRC	
JERRY CAMMANN	MSA	376-1554
Dale McKenney	CHPRC-EP	
Brett Barnes	CHPRC-EP	376-3640
Al Cawrse	CHPRC-EP	
Don Flyant	CHPRC-E	
Lee Ebbson	CHPRC	


RCRA Inspection 11/19/14 Archival Original Photographs
HANFORD WA7890008967 Waste Encapsulation Storage Facility (WESF)
HANFORD WESF
WA7890008967
11/19/2014
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11/19/14
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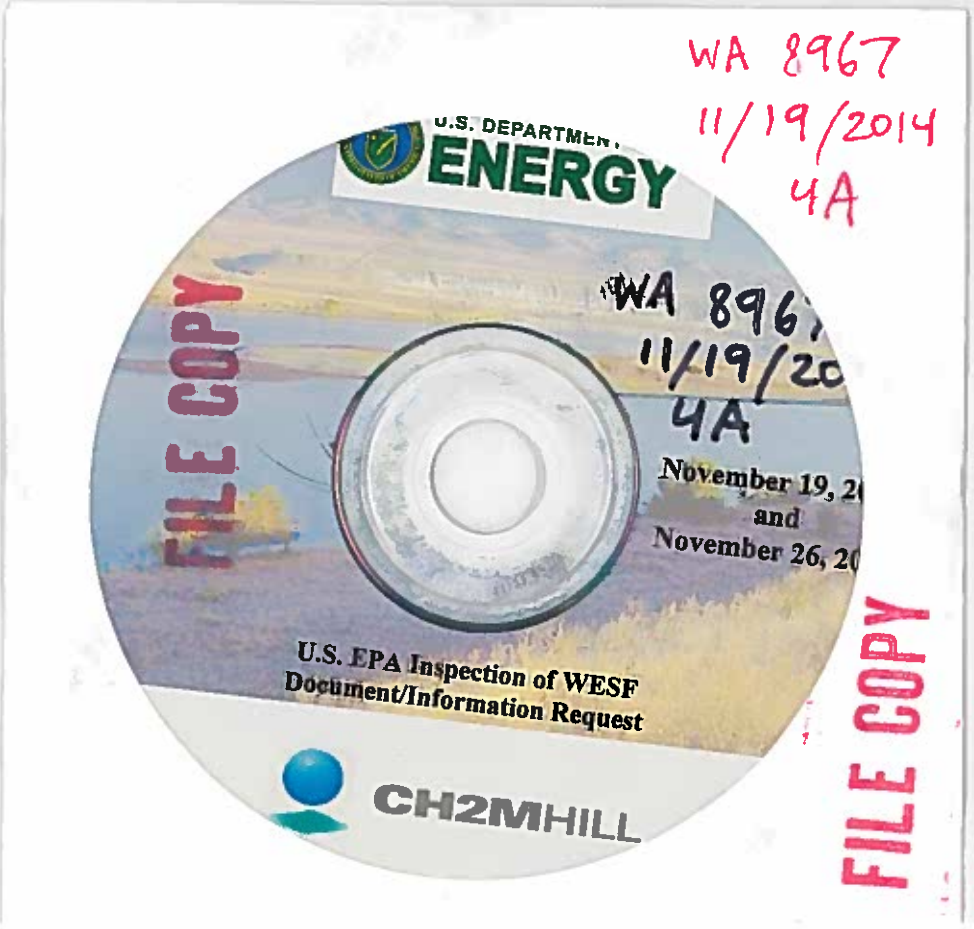
4A


WA 8967
11/19/2014
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U.S. DEPARTMENT OF ENERGY
November 19, 20
and
November 26, 20
U.S. EPA Inspection of WESF
Document/Information Request
CH2MHILL
FILE COPY
FILE COPY